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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,662	05/31/2001	Luc Ouellet	11471-US	7966
23553	7590	02/10/2004	EXAMINER	
MARKS & CLERK P.O. BOX 957 STATION B OTTAWA, ON K1P 5S7 CANADA			TALBOT, BRIAN K	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 02/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/867,662

Applicant(s)

OUELLET ET AL.

Examiner

Brian K Talbot

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12/21/01.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/21/01.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. Claims 1-29 remain in the application.

### *Claim Objections*

2. Claims 8 and 23-26 are objected to because of the following informalities:

The claims recite raw material gases which are written out and shown in shorthand, i.e. hydrogen, H,. Applicant should provide a semicolon [;] between such recited gases to avoid confusion, i.e. hydrogen, H; chlorine, Cl; etc. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shioya et al. (4,394,401), or Hseih et al., Characteristics of low-temperature and low-energy plasma-enhanced chemical vapor deposited SiO<sub>2</sub>", Law et al. (5,861,197), Bouffard et al. (5,409,743) or JP 62-279303.

Shioya et al. (4,394,401), or Hseih et al., Characteristics of low-temperature and low-energy plasma-enhanced chemical vapor deposited SiO<sub>2</sub>", Law et al. (5,861,197), Bouffard et al.

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(5,409,743) or JP 62-279303 all teach forming silicon containing films whereby the flow rates or gaseous mixture is controlled in order to form the silicon containing film.

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shioya et al. (4,394,401), or Hseih et al., Characteristics of low-temperature and low-energy plasma-enhanced chemical vapor deposited SiO<sub>2</sub>", Law et al. (5,861,197), Bouffard et al. (5,409,743) or JP 62-279303 alone or in combination with Gau et al. (6,670,695).

Shioya et al. (4,394,401), or Hseih et al., Characteristics of low-temperature and low-energy plasma-enhanced chemical vapor deposited SiO<sub>2</sub>", Law et al. (5,861,197), Bouffard et al. (5,409,743) or JP 62-279303 fail to teach all the claimed precursor gases whereby all of the gases except one are controlled.

Shioya et al. (4,394,401) teaches gases of SiH<sub>4</sub>, N<sub>2</sub>O, Ph<sub>3</sub> and Argon (abstract and col. 2, line 45 – col. 4, line 45). Hseih et al., Characteristics of low-temperature and low-energy plasma-enhanced chemical vapor deposited SiO<sub>2</sub>" teaches SiH<sub>4</sub> and N<sub>2</sub>O and Helium as well as monitoring by FTIR (abstract), Law et al. (5,861,197) teaches silane and nitrous oxide (abstract),

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Bouffard et al. (5,409,743) teaches SiH<sub>4</sub>, N<sub>2</sub>O, Boron and PH<sub>3</sub> (abstract and col. 3, line 20 – col. 5, line 25). JP 62-279303 teaches silane, nitrous oxide, germanium, PH<sub>3</sub>, etc. (abstract).

Shioya et al. (4,394,401), or Hseih et al., Characteristics of low-temperature and low-energy plasma-enhanced chemical vapor deposited SiO<sub>2</sub>, Law et al. (5,861,197), Bouffard et al. (5,409,743) or JP 62-279303 all teach criticality of the deposited film by controlling a number of parameters associated with the deposition process of which flow rate is one.

While the Examiner acknowledges the fact that the references are silent upon maintaining all the flow rates of the precursor gases constant while changing one, it is the Examiner's position that one skilled in the art would have had a reasonable expectation of doing such since the results can be attributed to a single change in flow rate as opposed to changing one or more variables.

Gau et al. (6,670,695) teaches changing the flow rate of one precursor gas and maintaining the other constant to form a silicon film having a graded structure (col. 3, lines 29-48 and claims 3 and 4).

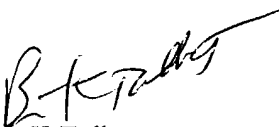
Therefore, it would have been obvious at the time the invention was made to have modified Shioya et al. (4,394,401), or Hseih et al., Characteristics of low-temperature and low-energy plasma-enhanced chemical vapor deposited SiO<sub>2</sub>, Law et al. (5,861,197), Bouffard et al. (5,409,743) or JP 62-279303 processes by controlling a single precursor flow rate as evidenced by Gau et al. (6,670,695) to control the deposited film produced.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Brian K Talbot  
Primary Examiner  
Art Unit 1762

BKT